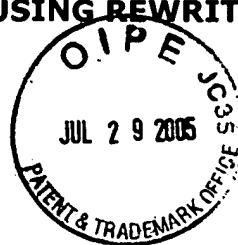


**INFORMATION COMMUNICATING SYSTEM USING REWRITABLE OPTICAL DISK**

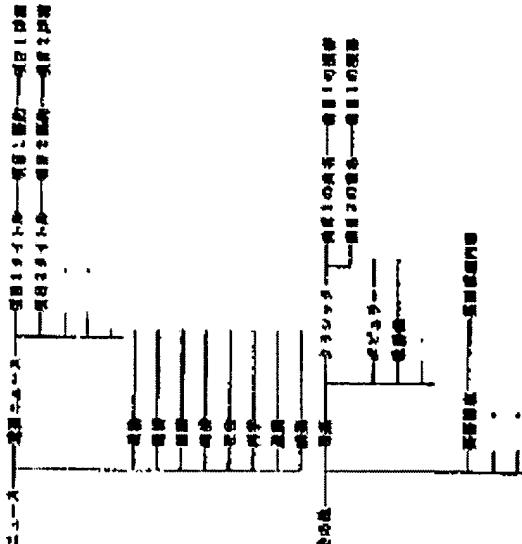
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**Abstract of JP4310631**

**PURPOSE:** To obtain a voice information communicating system where a receiver can select and hear only the information which the receiver desires by classifying and transmitting the information classified by the item by an information supplier.

**CONSTITUTION:** Voice information from the supplier of information is converted and inputted to an electric signal by sound-recording the human voice and the voice synthesisization by a machine. The sound signal is item-classified by the content and each item is arranged onto a menu. Respective menu items are further classified into finer sub-menus, and made into plural hierarchies such as a child menu and a grandchild menu. Further, some key words are extracted from each information item, the key word information is added to the special position of the signalled voice information and the special item and the related information can be retrieved in no relation to the position on the menu. Thus, the edited voice information is transferred by using a transmitter from the information supplier.



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TITLE OF THE INVENTION

INFORMATION TRANSMISSION SYSTEM EMPLOYING REWRITABLE OPTICAL  
DISK

DETAILED DESCRIPTION OF THE INVENTION

[0001]

[Field of Industrial Use]

The present invention relates to an information transmission system employing a rewritable optical disk for recording, reproducing, and erasing information with the use of laser light beams, thereby speedily providing information to a plenty of people.

[0002]

[Prior Art]

A system of transmitting information to a plenty of people is used by means of voice, video images, and printed matters. Among them, voice information transmission has an advantage over video images or printed matters in that information can be received in limited space with simplified equipment while doing another work. For example, voice information transmission using a radio is the most convenient means for obtaining information such as news in a crowded train or in a driving vehicle.

[0003]

[Objects the Invention]

However, conventional radio broadcasting which is a

conventional voice information transmission system has suffered from the following disadvantage. That is, it is impossible to select only information on fields in which individual information receivers are interested, and thus, the information is limited to very general topics. Assuming that detailed information is contained in broadcasting, a large amount of time is required for one broadcast. From among them, the information receivers must wait for a long time until the information which they want to listen to is broadcasted. This situation is inefficient for the receivers. Furthermore, information is not sent only during a predetermined time in a one-sided manner. The information which they listened to cannot be repeatedly listened to for confirmation. These disadvantages are antitypical to news reports using printed matters such as newspapers. In the case of newspapers, it is possible to pick up only information which information receivers want from among a variety of fields. In addition, the receivers can read them at a time convenient to them, and it is possible to reread them a plenty of times for conformation.

[0004]

The present invention has been made to solve the above described disadvantages.

It is an object of the present invention to provide a voice information transmission system which makes it possible for information receivers to select only information they want and reproduce it a plenty of times at an arbitrary time.

[0005]

[Means for Achieving the Objects]

The above described disadvantages can be solved by employing an information transmission system employing a rewritable optical disk characterized in that, in an information transmission system between an information provider for providing voice information and a plurality of information receivers, the information provider classifies voice information on an item by item basis, the voice information is transmitted to the information receivers in a form compressed at a time shorter than during voice reproduction, the information receivers receives the thus transmitted voice information by means of receiving equipment, the voice information is temporarily recorded in a rewritable optical disk by means of an optical disk recording device, and only items selected from among items of voice information are reproduced at an arbitrary time by employing an optical disk reproduction device.

[0006]

[Function]

FIG. 1 shows flow of information in an information transmission system using this scheme. Information providers are typically newspaper publishers or broadcasters. Voice information is converted to electric signals by voice synthesizing through human voice recording or machines. These voice signals are classified on an item by item basis according to their contents, and the items are listed on a menu. Each menu items are classified into more detailed submenus, thereby making it possible to produce a plurality of hierarchies such

as children menus or grandchildren menus. Furthermore, if some keywords are extracted from among items of information, and the keyword information is added to specified positions of signalized voice information, it is possible to search specific matters and associated information irrespective of the menu positions.

[0007]

The thus edited voice information is transferred by information providers using a transmitter. This transfer means includes a method employing television radio waves such as UHF and VHF, a transfer method using microwaves via communication satellites, and a transfer method through wired TV cables or the like. In addition, in connection with these respective transfer methods, there can be several cases in which where a specific channel is used for their respective transfer method back-channel voice is sent while it is multiplexed on TV broadcast radio waves, and information is sent while one occupies a channel at a midnight TV broadcast intermission time.

[0008]

Upon transfer of the voice information the voice information is sent in a form compressed in view of time intervals. That is, transfer is completed within a shorter time than a time required for reproducing as a voice information to be transferred all the voice. This time compression can be performed by a method of simply sending analog voice waveforms in a fast mode, a method of temporarily digitizing and sending information, and a method of sending a plurality of voice information while multiplexing them simultaneously.

[0009]

The thus sent voice information is received by means of the receiving equipment at home of an information receiver, and the received voice information is stored in a rewritable optical disk by means of an optical disk recording device. The receiving equipment and optical disk recording device can be integrated with single equipment and can be incorporated in the conventional TV broadcast receiving equipment. At this time, if a function of sensing a menu or a keyword of a transferred signal and automatically recording only the item(s) recorded by the receiving equipment in advance in the rewritable optical disk is additionally provided to the receiver or optical disk recording device, a limited recording capacity on the optical disk can be utilized more efficiently without acquiring redundant information.

[0010]

The thus transferred voice information is reproduced as voice information by employing the optical disk reproduction device. A magneto-optical disk reproduction device exclusively used for reproduction can be downsized, thus making it possible to perform reproduction in a train while a portable device is used or making it possible to listen to voice information reproduced while driving with it being mounted on a vehicle. The reproduction device has a function of selecting required items from hierarchical menus, making it possible to pick up only information which the receivers are interested in and reproducing it. The reproduction device can mount an image

monitor. In this case, it is possible to display which item on a menu is selected by characters on a screen or display a still image sent from an information provider.

[0011]

The rewritable optical disk can be repeatedly used, thus making it possible to utilize this information system for a long time as long as one or two disks are present. In addition, in this system, the disk rewriting count is some thousands times at most, it is sufficient that the optical disk to be used guarantees an order of ten thousand times of rewriting.

[0012]

[Embodiments]

Embodiment 1

In the present embodiment, an information provider is a broadcaster which provides voice information, mainly news information. General news is recorded from a human voice, and a fixed format such as weather forecast or stock market information is inputted by utilizing mechanical voice synthesizing. In addition, voice information includes contents with less immediacy such as music, dramas, entertainments, or English courses as well as news. These voice information are classified on an item by item basis according to their contents, and are managed by a menu shown in FIG. 2. Large menu items follow classification of newspaper headlines in most cases. The respective menus are divided into detailed submenus, and a plurality of hierarchies such as children menus or grandchildren menus are produced. In the case of news, more detailed

information such as titles, outlines, and details relating to the items can be obtained as the menu hierarchy go down, whereby the receivers can arbitrarily select a degree of details of obtained information according to the receiver's depth of interest. In the case of music, classification on a style by style basis is placed as a submenu, and further, titles and performance are added as the menu hierarchy goes down.

[0013]

The thus edited voice information is transferred from a broadcaster to an information receiver. At this time, voice information is sent to a relay point via a communication satellite by means of microwaves, from where the sent voice information is propagated to each home through wired TV cables. This transfer is sent while a channel is occupied at a midnight TV video image broadcast intermission time. Here, the voice information is temporarily digitized and sent at a high speed, whereby transfer is performed in a mode compressed in view of time intervals. The voice information is stored in a 3.5-inch magneto-optical disk recording device at home of an information receiver. In this way, news transmission is performed from night time to morning, and thus, the voice information is delivered to each home at a next early morning. In addition, this optical disk recording device of the receiving equipment can use a limited recording capacity on an optical disk efficiently because it has a function for selectively recording in the optical disk the menu items and keyword associated information registered by the receiver in advance.

[0014]

In this manner, the magneto-optical disk having recorded news information recorded therein is moved to a small sized optical disk reproduction device, and voice is reproduced. The device exclusively used for reproduction can be downsized, thus making it possible to use a portable device or mount it on a vehicle. In the case where the reproduction device is used as a portable device, even in a crowded place such as train, one can listen to voice without bothering persons around him or her by employing earphones. In addition, when the reproduction device is mounted on a vehicle, one can listen to voice information reproduced while in driving.

[0015]

FIG. 3 shows an appearance of an optical disk reproduction device for use in the embodiment. The optical disk is inserted from an insert port 1. A liquid crystal display panel 2 displays which item on a menu is selected. In addition, the still image sent from a broadcasting station can be displayed on this monitor. Control buttons 3 include operation buttons of (Reproduce), (Stop), (Fast Feed), and (Rewind) relating to voice reproduction and operation buttons of (Select Current Item), (Proceed to Next Item), (Back to Previous Item), and (Back to High-Order Menu) relating to item selection on a menu. A reproduction voice is audible by making connection to an earphone plug 4. The volume is controlled by means of a volume 5.

[0016]

[Advantages of the Invention]

According to the present invention, it is possible to perform information transmission to people speedily and in detail. Only information desirable to an information receiver can be obtained at one's favorite time and it is possible to conform information at any time as required.

#### BRIEF EXPLANATION OF THE DRAWINGS

##### [FIG. 1]

FIG. 1 is a conceptual view of flow of voice information in an information transmission system according to the present invention.

##### [FIG. 2]

FIG. 2 is a menu structure according to embodiment 1.

##### [FIG. 3]

FIG. 3 is an external view of an optical disk reproduction device for use according to embodiment 1.

##### [Explanation of Reference Numerals]

- 1... Optical disk insert port
- 2... Liquid crystal display panel
- 3... Control buttons
- 4... Earphone plug
- 5... Volume

FIG. 1

Information provider (broadcasting station)

Voice signal input

Item classification

Signal compression

Information receiver

Wired or wireless broadcasting

At home

Receiving equipment

Optical disk recording device

Rewritable disk recording device

Rewritable optical disk

Portable optical disk reproduction device

Reproduced voice information

Information receiver

FIG. 2

News

Important news

Title of item 1

Summary of item 1      Details of item 1

Title of item 2

Summary of item 2      Details of item 2

Politics

Economy

International

Economy

Society

Science

Industry

Entertainment

Others

Music      Classic

Title of music number 1   Performance of music number 1

Title of music number 2   Performance of music number 2

Pops

Hit parade

English course   Contents of English course